We Claim:

1. In an anti-reflective coating composition for use during microlithographic processes, said composition comprising a polymer dissolved in a solvent system, the improvement being that said composition comprises less than about 0.3% by weight of a strong acid.

2. The composition of claim 1, said composition further comprising a compound selected from the group consisting of phenolic compounds, carboxylic acids, phosphoric acid, and cyano compounds.

3. The composition of claim 2, wherein said compound is chemically bonded with said polymer.

4. The composition of claim 2, wherein said compound is selected from the group consisting of Bisphenol S, Bisphenol A, α-cyano-4-hydroxycinnamic acid, phenol novolaks, and acetic acid.

5. The composition of claim 1, wherein said composition comprises a compound selected from the group consisting of surfactants, crosslinking agents, and mixtures thereof.

6. The composition of claim 5, wherein said surfactant is selected from the group consisting of fluorinated surfactants and carbonated surfactants.

7. The composition of claim 5, wherein said crosslinking agent is selected from the group consisting of aminoplasts and epoxies.

8. The composition of claim 1, wherein said solvent system includes a solvent selected from the group consisting of PGMEA, PGME, propylene glycol *n*-propyl ether, 2-heptanone, *N*-methylpyrollidinone, ethyl lactate, cyclohexanone, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, and mixtures thereof.

9. The composition of claim 1, wherein said polymer is selected from the group consisting of acrylic polymers, polyesters, epoxy novolaks, polysaccharides, polyethers, polyimides, and mixtures thereof.

10. The composition of claim 9, wherein said polymer is a methacrylate.

11. The composition of claim 1, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

12. In an anti-reflective coating composition for use during microlithographic processes, said composition comprising a polymer dissolved in a solvent system, the improvement being that the weight ratio of strong acid to weak acid in said composition is from about 0:100 to about 50:50.

13. The composition of claim 12, said composition further comprising a compound selected from the group consisting of phenolic compounds, carboxylic acids, phosphoric acid, and cyano compounds.

14. The composition of claim 13, wherein said compound is chemically bonded with said polymer.

15. The composition of claim 13, wherein said compound is selected from the group consisting of Bisphenol S, Bisphenol A, α-cyano-4-hydroxycinnamic acid, phenol novolaks, and acetic acid.

16. The composition of claim 12, wherein said composition comprises a compound selected from the group consisting of surfactants, crosslinking agents, and mixtures thereof.

17. The composition of claim 16, wherein said surfactant is selected from the group consisting of fluorinated surfactants and carbonated surfactants.

18. The composition of claim 16, wherein said crosslinking agent is selected from the group consisting of aminoplasts and epoxies.

19. The composition of claim 12, wherein said solvent system includes a solvent selected from the group consisting of PGMEA, PGME, propylene glycol *n*-propyl ether, 2-heptanone, *N*–methylpyrollidinone, ethyl lactate, cyclohexanone, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, and mixtures thereof.

20. The composition of claim 12, wherein said polymer is selected from the group consisting of acrylic polymers, polyesters, epoxy novolaks, polysaccharides, polyethers, polyimides, and mixtures thereof.

21. The composition of claim 20, wherein said polymer is a methacrylate.

22. The composition of claim 12, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

23. The composition of claim 12, wherein said composition comprises less than about 0.3% by weight of a strong acid.

24. In an anti-reflective coating composition for use during microlithographic processes, said composition comprising a polymer dissolved in a solvent system, the improvement being that said composition comprises a compound selected from the group consisting of Bisphenol A, phosphoric acid, and α-cyano-4-hydroxycinnamic acid.

25. The composition of claim 24, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

26. The composition of claim 24, wherein said composition comprises less than about 0.3% by weight of a strong acid.

27. The composition of claim 24, wherein the weight ratio of strong acid to weak acid in said composition is from about 0:100 to about 50:50.

28. The composition of claim 24, wherein said compound is chemically bonded with said polymer.

29. The combination of a substrate having a surface and a cured protective layer on said substrate surface, said cured protective layer being formed from a composition comprising a polymer dissolved in a solvent system and less than about 0.3% by weight of a strong acid.

30. The combination of claim 29, said composition further comprising a compound selected from the group consisting of phenolic compounds, carboxylic acids, phosphoric acid, and cyano compounds.

31. The combination of claim 30, wherein said compound is chemically bonded with said polymer.

32. The combination of claim 30, wherein said compound is selected from the group consisting of Bisphenol S, Bisphenol A, α-cyano-4-hydroxycinnamic acid, phenol novolaks, and acetic acid.

33. The combination of claim 29, wherein said composition comprises a compound selected from the group consisting of surfactants, crosslinking agents, and mixtures thereof.

34. The combination of claim 29, wherein said polymer is selected from the group consisting of acrylic polymers, polyesters, epoxy novolaks, polysaccharides, polyethers, polyimides, and mixtures thereof.

35. The combination of claim 34, wherein said polymer is a methacrylate.

36. The combination of claim 29, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

37. The combination of a substrate having a surface and a cured protective layer on said substrate surface, said cured protective layer being formed from a composition comprising a polymer dissolved in a solvent system, the weight ratio of strong acid to weak acid in said composition being from about 0:100 to about 50:50.

38. The combination of claim 37, said composition further comprising a compound selected from the group consisting of phenolic compounds, carboxylic acids, phosphoric acid, and cyano compounds.

39. The combination of claim 38, wherein said compound is chemically bonded with said polymer.

40. The combination of claim 38, wherein said compound is selected from the group consisting of Bisphenol S, Bisphenol A, α-cyano-4-hydroxycinnamic acid, phenol novolaks, and acetic acid.

41. The combination of claim 37, wherein said composition comprises a compound selected from the group consisting of surfactants, crosslinking agents, and mixtures thereof.

42. The combination of claim 37, wherein said polymer is selected from the group consisting of acrylic polymers, polyesters, epoxy novolaks, polysaccharides, polyethers, polyimides, and mixtures thereof.

43. The combination of claim 42, wherein said polymer is a methacrylate.

44. The combination of claim 37, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

45. The combination of claim 37, wherein said composition comprises less than about 0.3% by weight of a strong acid.

46. The combination of a substrate having a surface and a cured protective layer on said substrate surface, said cured protective layer being formed from a composition comprising a polymer dissolved in a solvent system and a compound selected from the group consisting of Bisphenol A, phosphoric acid, and α-cyano-4-hydroxycinnamic acid.

47. The combination of claim 46, wherein said composition gives a spin bowl compatibility test result of greater than about 90%.

48. The combination of claim 46, wherein said composition comprises less than about 0.3% by weight of a strong acid.

49. The combination of claim 46, wherein the weight ratio of strong acid to weak acid in said composition is from about 0:100 to about 50:50.

50. The combination of claim 46, wherein said compound is chemically bonded with said polymer.

51. A method of forming a precursor structure for use in manufacturing integrated circuits, said method comprising the step of applying a quantity of an anti-reflective composition according to claim 1 to the surface of a substrate to form an anti-reflective layer on said substrate surface.

52. The method of claim 51, wherein said applying step comprises spincoating said composition on said substrate surface.

53. The method of claim 51, further including the step of baking said anti-reflective layer after said applying step at a temperature of from about 125-225°C.

54. The method of claim 53, further including the step of applying a photoresist to said baked anti-reflective layer.

55. The method of claim 54, furthering including the steps of:
exposing at least a portion of said photoresist layer to activating radiation;
developing said exposed photoresist layer; and
etching said developed photoresist layer.

56. A method of forming a precursor structure for use in manufacturing integrated circuits, said method comprising the step of applying a quantity of an anti-reflective composition according to claim 12 to the surface of a substrate to form an anti-reflective layer on said substrate surface.

57. The method of claim 56, further including the step of baking said anti-reflective layer after said applying step at a temperature of from about 125-225°C.

58. The method of claim 57, further including the step of applying a photoresist to said baked anti-reflective layer.

59. The method of claim 58, furthering including the steps of:
exposing at least a portion of said photoresist layer to activating radiation;
developing said exposed photoresist layer; and
etching said developed photoresist layer.

60. A method of forming a precursor structure for use in manufacturing integrated circuits, said method comprising the step of applying a quantity of an anti-reflective composition according to claim 24 to the surface of a substrate to form an anti-reflective layer on said substrate surface.

61. The method of claim 60, further including the step of baking said anti-reflective layer after said applying step at a temperature of from about 125-225°C.

62. The method of claim 61, further including the step of applying a photoresist to said baked anti-reflective layer.

63. The method of claim 62, furthering including the steps of:

exposing at least a portion of said photoresist layer to activating radiation;

developing said exposed photoresist layer; and

etching said developed photoresist layer.